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# Mixed-Layer clay minerals as indicator of diagenesis processes in oil bearing rocs

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## Abstract

To optimize oil production technologies must take account of the extent and causes of secondary changes of structures of illite-smectite phase in oil bearing rocs as result of diagenesis processes, but ordinary relation between concentrations of smectite in interstratified phase and depth is absent. The welldeveloped method for studying mixed layer phases is fitting, in which the parameters of theoretical basal diffraction spectra of clay minerals are chosen so as to fit experimental curves, in particular, for different preparations of samples. This allows identification of phases from alternations of different layers and packets. The fitting method is based on the theory of Markov chains, where the probability characteristics for any sequence of layers are uniform and have the same statistical dispersion. In oil bearing rocs this stipulation is often non real. In this occurrence a procedure for structural investigations of illite-smectite phases was worked out an original method of x-ray analysis. It is establish, that in depth more ≈ 2,3 km the oil bearing collector often contain, as admixture, the mixed-layer clay phases which R = 1 and R = 2 together. May be, it is result of secondary removing of oil-water fluid in the oildeposit, if the percolation effect is present. In this chance, it is possible to establish of the history of the oil deposit.

## Keywords

Diagenesis of oil bearing rocks, Interstratified illite-smectite, X-ray analysis